

C - Amendments to the Claims

Please amend claim 15 as follows:

15. (currently amended) A method of determining parameters of formations comprising multiple layers and through which a borehole passes, on the basis of a resistivity log recorded in the borehole by means of a measuring and recording tool, the method comprising the steps of:

- (i) determining the formation parameters by a quasi-Newton parameter inversion method implemented on pseudo-parameters that are homogeneous and that are determined from the formation parameters taken simultaneously over all the layers of formations, so as to obtain a model of the formations;
- (ii) calculating the response of the tool to the model;
- (iii) using a comparison criterion for comparing the calculated response with the recorded log;
- (iv) performing at least one new iteration if the comparison criterion is not satisfied; and
- (v) determining the formation parameters from the calculated response.

Claims 16-27 (original)

Claim 28 (currently amended): A method of determining the parameters R_t , R_{xo} , and d_i of formations comprising multiple layers and through which a borehole passes, on the basis of a resistivity log recorded in the borehole by means of a measuring and recording tool, the method comprising the steps of:

- (i) determining the formation parameters by a quasi-Newton parameter inversion method implemented on pseudo-parameters that are homogeneous and that are determined from the formation parameters taken simultaneously over all the layers of formations so as to obtain a model of the formations;
- (ii) calculating the response of the tool to the model;

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- (iii) using a comparison criterion for comparing the calculated response with the recorded log;
- (iv) performing at least one new iteration if the comparison criterion is not satisfied; and
- (v) determining the parameters R_i , $R_{x(i)}$, and d_i from the calculated response.

Claims 29-40 (original).

Schlumberger Private